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VITALIZING THE NATION AND CONSERVING HUMAN UNITS THROUGH THE DEVELOPMENT OF AGRICULTURAL COMMUNITIES

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Perhaps there is no field today richer in opportunity for the scientist and for the sociologist, than that which relates to agriculture.

In reading an address recently made to the members of the American Chemical Society, by its president, I was deeply impressed by the altruistic ideals expressed in the keynote of the address. This address pointed out that the ultimate aim of research is not the discovery of "Truth for Truth's sake," or "Science for Science's sake"—but, rather, the uplift of mankind.

And the idea was driven home with this striking statement, "If this be not the goal, then pure chemistry becomes a selfish toy, and applied chemistry a mere tool for greed."

May we not assume that all branches of science and all applications of science are beginning to feel the same thrill, to earnestly desire the same purpose; to interest themselves in the betterment of humanity.

Even the most pronounced pessimist must admit a marked progress since the individualism which is supposed to have characterized the Stone Age; and there is no reason to assume that this progress has stopped.

While the convulsion now shaking the world points temporarily backward, it may be similar to some of the great disturbing readjustments of nature. It may bring men and nations closer together in preparation for constructive work for the common good.

In so far as America is concerned, the certain result will be an enormous accumulation of wealth; and the future of the country is going to be shaped by the way this wealth is used. If extravagance and selfishness are to be the outcome then indeed the future is dark; but if American democracy has reached a point where it can rise above the temptations which accompany wealth, and can use this

wealth for the well-being of democracy, than we may truly say that liberty will be enlightening the world. She will be enlightening the world to an extent greater than has ever been conceived of, because such an opportunity has never until now come within any one's dreams.

Observers who can go back as much as a generation or even ten years, can see changes so marked that it is difficult to grasp their scope. Twenty years ago it was considered right that a corporation should be "cold-blooded" and "soulless," that it should be run with the sole idea of profit to its shareholders. Good business methods were followed and perhaps a higher standard of business ethics than were subsequently the rule. The desire for gain and an indifference to public interests resulted, however, in a lax code of business morals, and this eventually brought antagonism from the public, followed by an era of misunderstandings and turmoil which perhaps reached its height during the past decade.

Apparently the public has established its supremacy, and at the same time the managers of corporations have been converted to a much saner point of view. It is now conceded that business methods should make for morality as well as efficiency; it is the common understanding that the public should be pleased, and that the corporation which gives the best service pleases the public most. During this same period we have seen a marked change in the attitude toward the laborer. He was, twenty years ago, simply a commodity and a unit. He was to be worked as hard as possible with the lowest pay possible, and with as few rights as possible. But public opinion and the constant resort to the courts have gradually brought a change, and those who manage corporations properly know that the working man must be considered and protected. With this recognition of legal responsibility a change of mental attitude has taken place, so that the best managers of corporations do not stay within the demand of the law but go beyond it in seeking ways to promote the comfort, the welfare and the interests of their employees. The accomplishment of Mr. Ford most convincingly marks the height to which this consideration of employees has been carried.

He has broken through convention. His plan, because of its magnitude, and particularly because it has succeeded, may become epoch-making.

While America has been an agricultural country, and while its wealth has been based on its agriculture, we have gazed so intently at figures relating to commercial development and manufacturing and to the financial transactions incident thereto, that the word "America" has to most of us carried with it the idea of finance and commerce; in other words, the measuring of values and the handling of products rather than the idea of their production.

We have relatively gone behind the rest of the world in our agricultural methods, and in our nourishment and care of the farming interests. Our thought has not been focused in that direction. Yet no one doubts that agriculture is the foundation stone of the nation's material welfare, and also of its political stability.

We must pay more attention to agriculture if the national structure is to have the proper proportions. No good architect will build a skyscraper on a weak or dangerous foundation. Why should we as a nation build a top-heavy structure? Why should we longer neglect the things that are basic?

It is safe to assume that we will not overlook the fundamental principles that are vital to the future of the nation. Many signs point to the fact that agriculture is to be revivified; that it will be placed on a footing which will make it attractive and profitable. In bringing our agriculture up to date in methods and in opportunities, we will do more than can be done in any other way toward bringing the nation to its highest efficiency and its possibilities for the comfort of its population.

The public is recognizing, through its increasing support of the agricultural departments of the various states and of the United States, the importance of giving to the farmer—the man who is engaged in the most scientific of all industries—the opportunity to learn the best methods of increasing the quantity and quality of his crops. Scientific farming is being taught in our universities and agricultural colleges. Daily papers and magazines are devoting more space to subjects relating to country life and to agriculture, and are continually finding a more widespread interest in these subjects. It is beginning to be believed that the rural schools should devote part of the time to teaching subjects of rural interest rather than those which relate to urban life. We hear much of boys' corn clubs, pig clubs, and girls' canning clubs; of moonlight schools, rural life schools, and similar undertakings, many of which

have been inaugurated through the coöperative work of the government and of the state department officials.

Scientists have recently contributed much to agriculture through the development of methods of fertilization, seed selection, and the perfection of appliances for the substitution of mechanical power in cases where the farm work was formerly done by manual labor and the help of farm animals.

Perhaps no contribution has been of more importance, or rather promises to be of more importance, because it is only just initiated, than the spread of knowledge relating to the usefulness of different kinds of bacteria in stimulating vegetable growth. Through the use of nitrogen-producing bacteria, which thrive on the roots of legumes, the growth of these leguminous plants is greatly increased as well as their power to take from the air large quantities of nitrogen and make it available in the soil as plant food. By this means it is possible to bring the soil up to a state of fertility and productiveness which has heretofore been unknown. This one discovery is sufficient to shape a new era in agriculture.

Again, the application of power machinery, especially the implements for plowing and harvesting, has now reached a point where it will make an entirely new thing of life on the farm. This perhaps has been an outgrowth of the development of the automobile and the areoplane; but it is far more important than either. When a farmer can plow ten times the amount of land at the same cost as heretofore, many of the problems of agriculture immediately disappear; when he can reap fifty acres of land for the same expenditure of time and money that he could formerly reap five, he is emancipated.

The engines and the machines for doing this are just being produced. They have reached a stage of development which makes the result a certainty. Some of these machines will be small enough so that they can do the work of a man on a five-acre farm; others are big enough and heavy enough to be important units on a five-thousand-acre farm. This result has been the question of applying the brains of the inventor to the needs of the farmer.

Now, let us go back to the statement of the president of the American Chemical Society: What is the purpose of all this, and what is the good of all this, unless it makes for the general good of

humanity? The accumulation of wealth is only a means to an end, and the question is, to what end?

If we can conceive of the highest use of the potential forces surrounding us, if the public mind is awakened to the national possibilities, then the seed has been sown which will stimulate the nation into new and more constructive life.

With agricultural departments, with corn clubs and canning clubs; with manufacturers who are pleasing the public and who are devising means to protect their employees; with helpful publications which are sent broadcast over the country; with capitalists, formerly designated as philanthropists, who are using their wealth for other and higher purposes than self-indulgence, we have certainly reached a stage which has in it ground for healthy optimism. But it seems that this has all just reached the same status as has the art of using bacteria for the increase of soil fertility and the art of using mechanical power for revolutionizing agriculture. We have all of the materials ready; we have the germ which is necessary to the cultivation of human welfare; we are ready to make the application. Humanity is on the threshold of something bigger than it has had.

When the farmer is raising one hundred bushels of corn, or two bales of cotton, or thirty hogs to the acre; when his girls are raising and canning much of the food that people will need; will the progress towards human welfare, towards education, and toward those comforts and refinements, which are considered the products of civilization, keep pace with his development? Will the laborer in the factory and in the mine understand the employer better? Will the capitalist be as much interested in the welfare of those who are working for him as he is in the dividends which are being paid from his investments? Will our legislators understand that it is expected of them to make laws which will bring about the spread of this better feeling? If so, there is much to be done.

When a farmer recently pointed out to me a small piece of ground and explained that he had planted on it one and one-half pints of beans, and had produced and marketed \$90 worth of beans, it was a revelation not only as to the possibilities but also the advantages of using ten cents worth of beans and a small piece of ground in the effort to be helpful, rather than using the ten cents direct.

Perhaps encouraged by this information and the conclusion

which it naturally leads to, the experiment was tried of taking a few destitute families from Belgium and helping them to raise their own food supplies on small tracts of fertile land. They were put to work planting vegetables the day after their arrival, and in sixty to ninety days had more food than they knew what to do with; in fact, the superabundance of food was their main trouble in life, and was actually a cause of discontent.

There are hundreds of millions of acres of productive land now unused in the United States. Plans should be perfected for the occupancy and proper use of these lands. This is easy to say, but extremely difficult of accomplishment. Many of the problems which are incidental to such a result have been overlooked or forgotten or are still to be solved. We speak of the aggregate wealth produced by the farmers, and forget the infinite toil and hardship and risk of the individuals in producing this wealth. We overlook the fact that except for removable handicaps this wealth could be from two to four times as great as it is, with the same expenditure of effort.

To make the unused lands available and attractive, the brains of the nation must be focused on plans through which worthy people can safely establish themselves on the land. This is essential for the purpose of independence and immediate profit, but it is of far more importance as a protection against want in old age.

Here is where our present industrial system falls down. We use up the best there is in a man; we encourage him in many forms of extravagance. Perhaps the most fortunate thing for him to do is to die while in the traces. If he is unfortunate enough to live beyond the "military age," he is automatically thrown aside. What becomes of him after that is not a matter of national thought. It is too bad, but we have neither time to consider it nor prevent it.

A few people support soup kitchens, build model tenements, and subscribe to home mission funds; but this is plainly inadequate and a mild palliative for a serious national, and, in fact, international problem.

It would seem that the proper development of agriculture and the right use of the vast potential resources which we have in our unoccupied lands would afford a solution for our present waste of human life and opportunity; would relieve the constant poverty and distress of our wornout units. Before such an ideal can be carried

out, it would be necessary to have better methods of directing people to suitable locations; better financial legislation in the nature of rural credits; better marketing facilities, so that too great a share of the wealth production would not be absorbed by interests which now come between the producer and the ultimate consumer. People who have agricultural inclinations, or training, or ability, should find it profitable and attractive to live on the land and in rural communities made far better and more modern than they have been in the past. Through concentrated national thought the drift of the people could be directed toward the open country instead of toward the congested centers. A man's occupation in the manufacturing industries should be universally recognized as being of a temporary nature, just as is the case in European countries with military service; and after making use of his capabilities during a period of years, he should have been induced to provide for himself an opportunity, or it should be provided for him, so that he could spend his remaining years in healthful occupation, under conditions of absolute independence, by cultivating or directing the cultivation of land.

The cultivation of land can, by the application of science, be brought down almost to the question of the use of brains. The necessary brains can be furnished by a man beyond middle age as well as at the stage of his greatest physical vigor. They can be furnished just as well by a woman as they can by a man. The problem comes down, first, to the recognition of the need; second, to the conception of the possibilities; and third to devoting a fair share of the national ability to removing obstacles and applying information that we already have available. The result will be the doing away with pauperism, and the raising of the national scale of intelligence and comfort.

We may learn from this war. Everyone who reads recognizes now the importance of organized efficiency. The results so far achieved have been measured by this. The hope of Germany has been due to the fact that she was far in advance of the rest of the world in organization and methods of coöperation. This effect has been secured through a strong form of government which could say, do this, and it was done. While this was the quickest, it is perhaps not the best, and certainly not the only way.

If democracy can be enlightened to a point where the different

units voluntarily say, let us do this for our common welfare, it will be infinitely superior to having done the same thing in unreasoning obedience; and it will have more permanence. The people will then so influence and shape the federal government that it will be a clearing house for our national industrial problems; but better, perhaps, it will be a great laboratory in which our national problems are first analyzed and then by a synthetic process sound policies constructed and enforced. The results would be returned to the people in a way that would be most beneficial.

To make progress we must have the benefit of inventive minds, and we must have the backing of public opinion. This public opinion must be expressed in terms of legislation in order to clear the way for practical results. As an illustration we may consider the question of immigration. Perhaps no one can predict the outcome of the influences at work in Europe. Some think that immigration to this country will be entirely stopped. Others think that the United States will be flooded with people. Of those holding the latter theory, there are the sub-groups, some of whom think it would be a calamity, and others think it would be a vast benefit. Healthy immigration should be a great upbuilding influence in this country. It should help the immigrant as well as ourselves. There is no growth so important or so profitable as the growth of population; but it goes without saying that this growth of population should be of the right quality and should be properly directed and cared for. Any misused force is dangerous. A study of the history of this country for the past twenty years will show that the tide of immigration, even though it has been handled in a haphazard way and with little thought, except perhaps to exploit the immigrant, has been beneficial. But if the sturdy people who are now showing such splendid qualities in Europe, can be directed under scientific guidance to our vast areas of unused land, the benefits would be beyond estimate to them and to us. It may be taken without question that anyone who is willing to go on the land and make a living, is a desirable citizen. The land and its problems which make it necessary to work understandingly with nature, may be considered to have the qualities of a great filter which will automatically separate the worthy citizen from the unworthy. The man who wishes to make a living by exploiting his fellows naturally seeks the slums of the great cities, and he soon

becomes a menace to the people and to the institutions of his country.

As the wealthiest neutral nation in the world we are under certain obligations to care for the suffering people, either in their own homes or in ours; in their countries or in America. Both methods will undoubtedly be employed. It is a requirement of our time and of humanity.

We have, wisely, in this country, commissions and societies for the study of different problems. One of the latest and perhaps one of the most important steps, was to form a group of scientists to pass upon inventions to be used in the Navy for the purpose of warfare; or, as we like better to express it, for the purpose of preventing war and protecting our country. Is the time not now ripe for calling together scientists and sociologists for the study and recognition of methods and legislation having for its purpose the betterment of human conditions? It would seem that through such an organized group we could reach, by democratic means, a degree of efficiency and comfort not less satisfying than that which we know has been reached in other countries by different methods; and it would seem wise in future not to devote the best thought of America in too great proportions to piling up trade balances or perfecting the methods of manufacturing, to stimulating commerce or developing our means of defense, unless we can carry with these, and underlying them all, what many men have recently seen and are reaching for, but have not sufficiently focused on—the good of humanity.